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AGRICULTURAL SITUATION

U.S. Department of Agriculture Statistical Reporting Service Vol. 53, No. 3

CROP SURVEY FROM SPACE

REPORTING FROM SPACE:

Above: Salton Sea of California, with the mottled Imperial Valley to the right of it, seen over a satellite's nose. Nevada lies beyond the black body of water.
Cover: Apollo 9 astronauts took this photo of Salton Sea and Imperial Valley. Thin line running across desert is the All American Canal, dividing California and Mexico. Valley land on Colorado River above Blythe, California can be seen on the right edge of photo.

On March 13, 1969, the three highest flying crop reporters yet—astronauts James McDivitt, David Scott, and Russell Schweickart—turned in a survey of what was growing on thousands of square miles of the United States. The Apollo 9 report—special photos taken from about 130 nautical miles high—proved that crop reporting may someday benefit from camera platforms in space.

Apollo 9 photos of California's Imperial Valley, together with photos taken from high-flying planes at the same time, gave researchers complementary views to gauge the value of agriculture pictures from space.

The space photos, substantiated by the air photos, revealed individual fields as small as 10 acres awaiting spring planting with 20 to 30 percent weed cover. Apollo 9 camera work showed salinity in some fields, and USDA scientists could tell that water was still in the furrows of one field irrigated shortly before the pictures were taken.

The Apollo 9 shutter-clicking was a practice effort by scientists to check the potential worth of space photography to such industries as farming, forestry, petroleum and minerals.

The astronauts' photos showed the feasibility of such a project and will help put the Earth Resources Technology Satellite (ERTS) closer to its late 1971 or early 1972

THE FIRST STEPS TOWARD A CONSTANT FARM DATA FLOW

launch. ERTS—full of cameras and other sensors—will be beneficial to many people who use the lands and seas to make a living, but farmers will probably profit most.

Although ERTS may aid the Statistical Reporting Service in determining some information of U.S. farming, it will probably never replace the earth-bound crop reporter. Flying at about 500 miles above the earth, the satellite won't see livestock, record plots of less than 10 acres, enumerate storage supplies, or foresee farmers' planting intentions.

Space Survey Uses

However, ERTS will provide a quick and repetitive view of the agricultural scene. ERTS will also complement the present SRS estimating program by:

—locating and identifying field crops.

—measuring growth rates through repeated coverage.

—assessing crop vigor and health.

Right now, scientists are working on predicting yields of major field crops, such as grains, from space.

Other services of ERTS helpful to agriculture include:

—the collection of timely information on water runoff patterns.

—measure soil moisture and report on snow extent and depth.

The Eyes and Ears of ERTS

To accomplish these missions, ERTS will be packed with electronic sensors now under development. Peering down will be three TV cameras that record the shape of things in green, red, and infrared. An optical scanner will record the spectral fingerprints of crops, trees, and other plants. The scanner differentiates one crop or plant from another provided the species cover a large enough area.

A special data gathering device will receive measurements sent from snow pack, stream, and rain gauges spread over the United States. These data will be broadcast back to an earth station twice a day, the TV cameras and scanner will report more often.

Reporting Back

Information transmissions, called "dumps", will be received every 100 minutes at Fairbanks, Alaska, and Rosman, New Mexico. ERTS, revolving in a polar orbit, will have a 10 minute dumping time above each station. Pictures stored on board will be broadcast at the rate of 3 per minute from both the scanner and the TV cameras. Each frame will cover a land area 100 by 100 miles. About 550 pictures will cover the entire United States.

For the United States, ERTS and its successors will supplement our proven SRS crop estimating system. However, for some less developed countries without crop reporting systems, a look by ERTS could spot the difference between feast and famine.

1970 FARM CENSUS AIDS WAR ON HUNGER IN CEYLON

Because there is universal free education in Ceylon, most of the 12 million people on this Asian island-nation are literate. But as Mr. D. P. R. Paranawidana, known to his friends as "Chumly," explains, you can exist without education but not without food.

Chumly is a statistical officer in Ceylon's Department of Census and Statistics. He is also one of 56 men and women from 36 countries in Washington, D.C. to train for the forthcoming World Census of Agriculture. The Statistical Reporting Service of USDA is providing instructors for the program.

Ceylon, equal in size to Maine, has limited farmland. In spite of a fairly high educational level and rapidly improving techniques, Ceylonese farmers have not been able to grow enough to feed the quickly expanding population. Foreign exchange earned from lucrative tea, rubber, and coconut crops must be used to buy food imports.

Meanwhile, unemployment grows as newly educated people search for scarce white collar jobs, although some are being settled in newly opened jungle lands, to raise vegetables, cereals and other crops.

The year Chumly spends here sharpening his skills in making farm surveys will help his country assess its farming needs better.

Ceylon's Agricultural Census, which is likely to be held in 1972, will provide information on the size and type of holdings, forms of tenure, land utilization, farm production, etc. These facts are needed to plan systematic improvements in food output, storage, and distribution and to improve the general living conditions of Ceylon's rural population.

The Census will also be used as a benchmark for making crop reports. Village headmen, who also act as crop reporters, submit local farming information every 6 months.

Data gathered through district offices, comparable to our State crop reporting services, are published yearly. The data concern family farms but not commercial plantations.

Chumly refers continually to a copy of the statistical pocketbook containing these facts as he talks about Ceylon's agriculture.

Last year, the pocketbook shows, Ceylon had 1.3 million acres of land capable of rice cultivation. The combined yield from a major and secondary harvest averaged about 5,000 pounds per acre, comparable to 4,475 pounds per acre in 1968 in the United States from a single harvest. Most of the Ceylonese rice crop is bought by the government directly from farmers, under a guaranteed price scheme (currently for about $3.70 per 100 pounds). Distribution to the public is rationed by means of coupon books.

Ceylon's annual crop report is helpful in charting the campaign to grow more food. And while it is not useful in its present form for forecasting supplies, Chumly feels that the census of agriculture will pave the way for the use of new techniques to refine and update Ceylon's agricultural statistics.

WORLD CENSUS WARMUP COMES TO PA.

Foreign trainees, "warming up" for the 1970 World Agricultural Census, visit the Anthony brothers, at left, on the lush grounds of their Berks County, Pa. chick hatchery. Mohammed Abonian (Saudi Arabia), paper in hand, interviews the Anthonys while (left to right) Irfan Sahin (Turkey), Dr. Jan Stelmach (Poland), and Kamal Farag (United Arab Republic) look on. A practice farm census will be conducted by the 56-member trainee group in Berks County July 21–August 14. A similar census was held last year in Yakima County, Wash.

Ceylonese Switch from Rice to Wheat

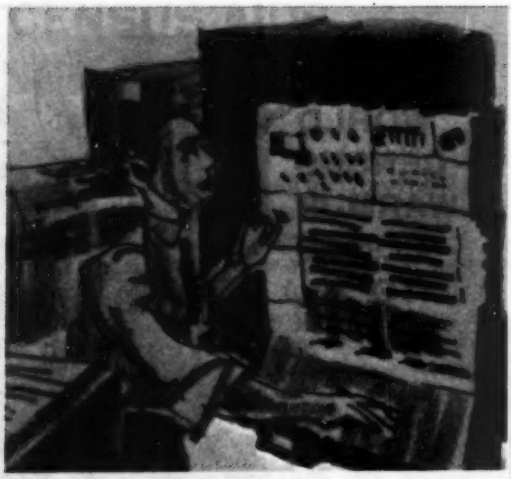
Eating habits are changing in Ceylon. Rice is being supplanted by noodles, bakery goods, and other wheat flour products.

High rice costs and the availability and low price of wheat flour account partly for the change. Also, new factories and construction have brought a rise in per capita income and thus stepped up demand for food.

In addition, the government changed its policy on rice rations in 1966. It reduced weekly allotments to ration card holders from 4 pounds at a low cost to 2 pounds at no charge. This resulted in greater demand, and therefore higher prices, for domestic rice and caused a rapid shift to wheat flour products. The cost in foreign exchange for rice imports was reduced, and the expense of the free rice rations was offset by profits from the sale of wheat flour and sugar.

More wheat product dishes on family tables were other more tangible results.

NEW DEVICES TO BRING COMPUTERS WITHIN YOUR REACH



New developments in computers—time-sharing and remote access terminals—are bringing the fanciest computers within the reach of the average commercial farmer.

Think of dropping into your local computer center and feeding in the information about your farm—size, equipment, livestock, labor available, etc. In minutes, the machine will examine all the enterprises you could have, and select the most profitable combination for *today's* conditions. The computer can then chart the "critical path" for your farming for the whole year—a checklist of what you need to do, and when, to get optimum production. It will calculate your highest-profit feed formula, the ideal number of corn plants per acre for the north 80, or the best machinery investment for harvesting your potatoes.

The "time-sharing" concept is brand new. It means you share a computer with other users . . . and split the cost too. The big third-generation computers now on line can handle 60 tough computing jobs simultaneously—so hundreds of customers can get their service from the same computer, and seldom feel a competitive pinch.

This cuts costs dramatically. A big computer may rent for $25,000 a month or more, but time-sharing splits up the cost.

For example, the Statistical Reporting Service's big computer at the Washington Data Processing Center is also leased to other customers in the Federal Government. The Center charges $600 a month for "full-time access" (220 hours a month of on-line computer time).

An Hour a Month

Of course, most farm businesses wouldn't need more than an hour a month of actual computer time to solve their decisionmaking problems. The machine solves most problems in seconds. Theoretically, then, the computer could handle some 200 farm customers on each of its 60 tracks—or 12,000 farm businesses! That could make computer costs reasonable indeed.

Remote access terminals are the other half of the promising new

package for computer-minded farmers . . . a way for you to communicate with the computer from your own office or a convenient location near you.

The remote access terminal can have a keyboard for coding information, a leased telephone line for "talking" with the computer, and a printout or TV-like device, that writes out the computer's answer.

The simplest form of remote terminal could be a touch-tone telephone right in your office. You could code simple questions on the phone keyboard and the computer would tell you the answer over the phone.

For more complicated computer work, how about a full-scale remote terminal nearby, staffed by a farm management specialist who would help you ask the right questions, code information, and interpret the computer's answers.

The "hardware"—computers, remote terminals, etc.—is available right now.

Software Slowups

The bottlenecks are finding enough staff and producing "software."

"Software" means loading the computers with the right information and techniques for analyzing farming problems.

There's a lot of research and development work involved. Just weighing the factors in a corn-growing program is pretty complex. How does the tillage system affect weed control and maturity? What will weather probabilities do to the program? Fertilizer response has to go into the equation, too.

Some software is already on its way. The Federal Extension Service and Virginia Polytechnic Institute, for instance, have a pilot project that will test remote terminals in Extension offices around Virginia. They are developing the programs which will answer Virginia farmers' questions. Other State Extension Services are working up tests and developing programs. Some farmer co-ops are already working with computers, and private firms are also getting into the field.

There *are* problems—but the day is coming when you'll pay a monthly computer charge like you pay your electric bill . . . and feel it just as vital to your farm business.

Borrowers Bearish

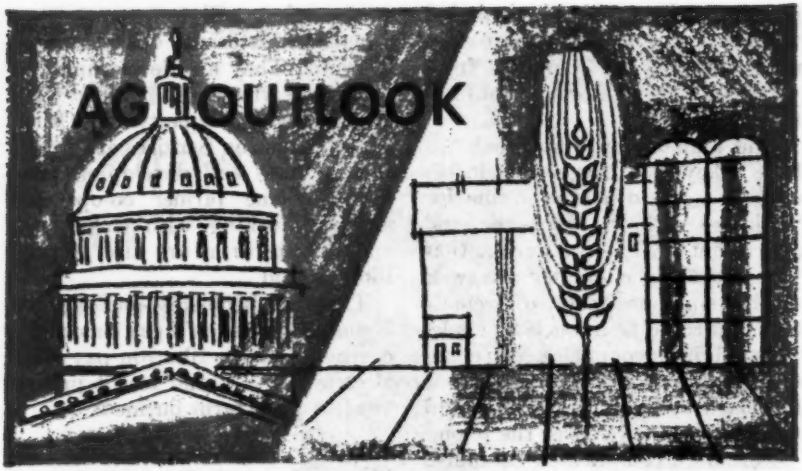
The average life insurance company loan to farmers for buying land or homes has hit a new peak of nearly $60,000. But mortgage borrowing from three major lending groups last year, $1.6 billion, was the lowest since 1963.

Borrowing was limited by heavy competition from the urban housing market for available dollars and by record interest rates charged by insurance companies and Federal land banks, the major lenders.

Rate increases brought life insurance company loan rates to 7.6 percent by year's end, while land banks were charging from 6.5 to 7 percent.

The $618 million loaned to farmers by life insurance companies, land banks, and the Farmers Home Administration during 1968's second half was down one-fourth from the second half of 1967.

Commitments by insurance companies for 1969 loans were one-third lower than in the previous year, and other lenders also foresaw a continued downturn in money loaned to farmers in 1969.



Based on Information Available July 1, 1969

PORK PICTURE: PRICES HIGHER . . .

Hog prices likely will continue well above 1968 levels the rest of the year. Fall pork supplies down sharply from a year ago will soften the seasonal decline in hog prices. But expected larger fall beef supplies could temper hog price strength.

. . . MARKETINGS UNEVEN

More hogs are being marketed this year than a year ago. This is due to larger farrowings in the first months of 1969. But come fall, marketings are expected to drop below a year earlier levels. The spring farrowings supplying most of these marketings were down 8 percent from the year before.

During the first months of 1970, the marketing picture could change again. The June 1 Hogs and Pigs Report of SRS showed that producers plan to farrow 3 percent more hogs this summer and fall than in these periods of 1968. Allowing for an expected uptrend in the number of pigs per litter, the planned farrowings would result in 4 percent more pigs than in summer and fall 1968. Most of these pigs will reach market weight during the first half of next year.

BROILER PRICES

Fast-rising consumer income and low unemployment so far in 1969 have kept poultry and red meat prices up, despite larger supplies. Wholesale broiler prices averaged 1.3 cents higher in the first half of 1969.

Meat supplies will continue large in the second half. Broiler output has been running well above last year's level so far in 1969. And favorable prices, feed-price ratios, and a larger hatchery flock all point to continuation of bigger output for the rest of this year. Beef output is expected to rise above second-half 1968 levels, but pork output will be lower—see "Pork Picture" on these pages.

Less certain is the course of consumer income. If efforts to curb inflation are successful, income growth will slow and so will demand for broilers. In this case, broiler prices would be under pressure during the last half of 1969, and run close to last year's levels.

FALL TURKEY PRICES

Expect at least as good prices as last winter for turkeys.

Supplies for holiday season marketings have been largely determined. The March–June poult hatch indicates the fresh turkey supply for September–December will be about the same as last year.

Unlike last year, however, there won't be an overload of cold storage turkey. Wholesalers dug deep into their cold storage supplies to fill heavy orders during the first half of 1969. Demand for further processed and cut-up turkey has been especially strong. By the end of May, cold storage holdings were nearly a third below a year earlier.

With light cold storage supplies, no increase in the turkey flock, and good demand expected, prices could go a little higher than last year.

POPULATION UP; SMOKING STEADY

Despite a growing smoking age population, cigarette consumption in 1969 is expected to hold near last year's level of 546 billion. Cigarette prices have risen and anti-smoking publicity has intensified.

Cigar smoking has apparently turned down. For the 10 months ended last April, the pace of cigar smokers had slackened 5 percent from a year earlier. Smoking tobacco and snuff use also seem likely to decline this year, although chewing tobacco production is up.

TOBACCO EXPORTS RECOVER

Exporters of unmanufactured tobacco, increasing their pace since settlement of dock strike last winter (which had nipped shipments from July 1968 through April 1969 by 5 percent), are now shipping at last year's rate. In the marketing year ended this June 30, exports were about 630 million pounds, farm sales weight.

LESS TOBACCO LEFT

Total disappearance of tobacco in the 1968/69 marketing year will top 1968 output. This will reduce the carryover about 300 million pounds below the 4.1 billion pounds at the start of the current marketing year.

CORPORATE FARMS PICTURED

Farm corporations today control only a slim share of commercial U.S. agriculture. And most of the firms are family run. These and other findings about corporate farms came out of a 47-State survey by the Economic Research Service.

Although Alaska, Hawaii, and California won't be reported until later this year, researchers have counted 11,550 farm corporations—about 1 perecnt of all commercial units in the surveyed States. These corporations held 7 percent of agricultural land in those States, and their share of gross farm sales was 8 to 9 percent.

Most corporations seem merely a modern form of the family farm—two-thirds of the reported corporations are family affairs. Farms controlled by other types of corporations, often local but non-farm-related businesses—made-up less than 20 percent of the total.

About two-fifths of all the corporations had interests off the farm, but most of these activities were tied to agriculture—feed, fertilizer, farm machinery and the like.

Livestock Favored

Farm corporations seemed to favor livestock over crops—usually with more animals than on the average farm.

The farm corporations usually grew the same crops as other farms in their areas, but on a larger acreage.

Sugarcane in Florida occupied largest average crop acreage per farm corporation, at 2,641 acres. Rice acreage averaged high in the Southern Plains at 1,105, and potato acreage ranged from an average 480 in the Pacific States to more than 1,140 in Florida.

Land devoted to canning crops averaged over 1,000 acres per operation in the Mountain States and more than 1,100 acres in the Corn Belt. Miscellaneous fruit farms in the Northeast averaged 1,244 acres. But such corporation crop units were few in number.

Field Crops Frequent

And, rather than fruits, vegetables or specialties, most corporations raised soybeans, corn and other feed grains, wheat and hay. They ranged from an average 70 acres of wheat per farm in Appalachia to 1,054 per farm for soybeans in the Delta States.

The 8 to 9 percent of gross sales of U.S. commercial agriculture that farm corporations ring up in the 47 States is well distributed throughout all farm income brackets.

Most corporations had gross farm sales of less than $100,000, and about two-fifths earned less than $40,000 per year. In each income bracket, most farm corporations were family-owned.

More than half the farm corporations in the 47 States had been in business before the current decade, about 40 percent incorporated between 1960 and 1966, 8 to 10 percent in 1967 and early 1968.

Tax Incentives

What seems to have impelled many farm operators to incorporate during the past decade is a provision of the 1958 tax bill. Its subchapter S helps small businesses that incorporate avoid double taxation. Internal Revenue Service data show that between 1958 and 1965 tax returns of agricultural firms under subchapter S leaped from about 500 to nearly 5,000.

Principally, the subchapter gives advantages of a general corporation to small corporate units having 10 or fewer shareholders and only one class of stock.

Before 1958, shareholders in small corporations paid taxes on dividends, and the corporation paid taxes on its earnings. Since 1958, corporation earnings are permitted to pass through to shareholders. Thus, corporate earnings are taxed only once.

Other legal benefits to incorporation include smooth transfer of the incorporated farm or business from one to another family member, and softening the impact of a gift or inheritance tax, after death or retirement of a shareholder.

PLYWOOD AND LUMBER PRICES

Last year, lumber prices poked above the treetops. This summer, they fell back to earth.

During 1968, the price of softwood lumber increased some 27 percent. Softwood plywood prices showed even larger increases.

Prices climbed to record levels because soaring demand outran available supplies. Expanding domestic and export markets for lumber outstripped the 10 percent rise in supplies. Production topped 1967 output by 2.3 billion board feet and imports of softwood rose 1 billion board feet, but it wasn't enough to meet added needs of residential construction, furniture, pallets, and containers.

Exports also put pressure on supplies. Softwood lumber shipments were 7 percent higher than in 1967, while softwood log shipments were up 32 percent.

Since March of this year, however, lumber demand has been curtailed by high bank rates and low housing starts. Prices charged by mills for some products dropped 50 percent by late February.

Of the 510 million acres of commercial forest land in the country, private sources account for 72 percent of the acreage and 61 percent of the softwood timber harvest. Most of the rest of the harvest comes from the cut on national forest lands, which has risen from 5.6 billion board feet in 1950 to 11.4 billion in fiscal year 1969.

In spite of the current situation, brought about by slack lumber demands, the Forest Service anticipates growing competition for timber and rising prices in the years ahead—unless efforts are begun immediately to increase timber supplies.

Prices Plummeted

Judging by lumber prices, if you built a machine shed or put up a fence last year, you probably wish that you had waited until now. After serious inflation last year, lumber prices peaked in February and then plummeted, over 50 percent in some cases.

An industry source shows these month-end prices at wholesale for studs (1,000 board feet) and sanded plywood (1,000 square feet).

For last week of—	*Studs, Douglas-fir 2 by 4, dry*	*Plywood*	
		Interior ¼ in.	*Exterior ⅜ in.*
1968			
Jan	$82	$70	$100
Jun	96	80	112
Dec	111	122	196
1969			
Jan	119	140	232
Feb	141	144	236
Mar	138	114	180
Apr	115	84	122
May	93	68	102
Jun	78	64	97

CHALLENGE FROM MEXICO

Culiacan, above, is the hub of Mexico's farming. Irrigated by modern facilities, left, the area pours out a bounty of fresh vegetables which ends up on our produce counters. Florida, main U.S. off-season vegetable source, is feeling the pinch.

Mexico is competing with Florida for the expanding U.S. market in fresh winter vegetables. Although Florida is still No. 1 supplier in this market, Mexico surpasses all other domestic sources, and increases shipments yearly.

The total value of fruit and vegetable imports to the United States from Mexico rose from $19 million in 1956 to nearly $100 million in 1967. Fresh vegetable imports accounted for $60 million of the 1967 total.

Fresh winter tomatoes, valued at over almost $43 million in 1967, rank first among these imports. Florida's 1967 fresh winter tomato output was valued at around $60 million.

Mexico exports a dozen other fresh winter crops, competing mainly with Florida's green peppers, eggplants, and cucumbers, and strawberries and early cantaloups from Arizona and Texas.

From the viewpoint of U.S. growers, Mexican imports are an investment that boomeranged. During the early 1950's, Florida growers invested in Cuban vegetable farms, while Californians put money into Mexico.

The small volume of imports from these farms was not a threat to domestic sales. But events during the last decade fortified Mexico's position, turning innocent investments into a major challenge.

In 1956, Florida growers were pushed out of Cuba by Castro.

About this time, first-rate transportation and irrigation facilities were constructed along Mexico's Pacific coast, where most vegetable production is located. New dams have opened a million acres to irrigation, and future projects will double the irrigated acreage.

Today, the Mexican vegetable industry flourishes, with modern techniques, a powerful grower's association, capital supplied by American brokers who buy the

vegetables, and a large, inexpensive labor pool.

Florida's industry is growing too with new consumer demand, but faces a tough labor problem.

The end of the bracero program in 1964 reduced the U.S. grower's labor supply. Wage rates since 1964 have risen sharply, and are headed higher. Growers aren't happy with the quality of the workers either.

Mexican vegetables cost less to produce but must travel farther than the domestic product. In 1967–68, a 20-pound lug of vine-ripe tomatoes cost 31 cents to grow in Mexico, versus 84 cents in Florida. But when marketing and shipping costs were added, Florida tomatoes could be delivered to Chicago for $2.63, only 7 cents more than Mexican imports.

Because of shipping costs, Mexican vegetables have the major market shares west of Chicago, while Florida prevails to the East.

Here's how competition for market shares of main vegetables is likely to come out:

Tomatoes. Mexican vine-ripened, or staked tomatoes captured one-third of the U.S. winter market in 1967. With bigger imports coming, Florida will be forced to reduce vine-ripe output and rely more on unstaked mature-green tomatoes. Laws aimed at holding down Mexican tomato imports are pending.

Green peppers, eggplants. Florida will continue to secure eastern markets, but Mexican shipments to the West will increase.

Cucumbers. Although Mexico supplies a third of the fresh winter cuke market, this share won't grow unless production costs are lowered.

Strawberries. Mexican winter strawberry shipments equal those from Florida. Mexico's volume will grow, curtailing further expansion by Florida growers.

Cantaloups. U.S. growing conditions are poorly suited to winter cantaloups. Mexico will continue to dominate the winter and early spring market.

FACTS FOR GROWERS

Sudden changes in conditions call for fast reactions by fresh vegetable growers. And that requires good information on planted acreage, production prospects, and harvesting conditions.

One of the most useful sources is the Vegetables for Fresh Market Report, issued on the 8th of each month by the Statistical Reporting Service. Beginning with forecasts of the winter fresh vegetable crops in January, the report follows the progress of each season's produce, from planting to harvest.

Supplementing this report are the Weekly Tomato Report from Orlando, Fla. and a Monthly Celery Report, keeping producers of these crops current on the staggered planting and harvesting rates.

With increasing competition from Mexican winter vegetables, timely production knowledge has gained new importance. The monthly vegetable report includes estimates of six fresh crops facing strong competition from imports:

(In million pounds)

Season and crop:	Year	
	1968	1969
Winter:		
Tomatoes	234.0	220.1
Green peppers	82.8	60.8
Strawberries	15.2	18.0
Eggplants	9.2	7.4
Early spring:		
Cucumbers	102.2	117.4
Spring: Cantaloup	384.1	509.5

Soy Meats: Still no Substitute for Steak

Impact of Synthetics
Second in a Series

Recent technological developments permit increasing use of vegetable protein from soybeans, cottonseed, and peanuts as substitutes for meat and poultry.

The greatest share of the action in extending or replacing meat with vegetable protein centers on soybeans.

Soy flour, grits and ***concentrates*** serve as binders or meat extenders in hamburger, hot dogs, sausage, and other finely ground meat products. However, Federal regulations restrict meatlike ingredients to 3.5 percent in a product.

Soy isolates achieved through fibrillation or "spinning" have a fibrous texture that can be molded and colored to simulate natural meat consistency and appearance. Flavor to taste, and this meat analog can pass for beef, chicken, pork, ham or turkey.

Soy proteins in the immediate future should be regarded as competing more with meats for manufacturing, than prime cuts such as beef loins or rounds.

Meat analogs may become increasingly important in the ***school and institution markets.*** Soy isolates with the appearance, "mouth feel", and taste of ham or bacon can be added to scrambled eggs, soups, stews, and luncheon meats, providing protein cheaper than bacon and with fewer calories than meat.

Though a clear view of prospects is difficult at this early stage of development, the institutional outlet may hold the most promise for vegetable-based substitute meat and poultry products. But spun protein isolates are also finding acceptance in vegetarian and dietary foods as meat alternates.

Luncheon meat sales, now 20 percent of retail store meat sales, offer another increasing outlet for soy protein. Estimates place the quantity of soy proteins used as extenders in processed meat products at 30 million pounds annually.

But aside from the somewhat restricted institutional, vegetarian, and luncheon meat outlets, a general acceptance of meat substitutes will hinge on their ability to compete with the real thing. Customer appeal would have to be whetted by proper taste, texture, and nutritive value accompanied by lower-than-meat prices.

Presently, meat-substitute type products are expensive to produce and priced in the steak and sirloin cut class. This may hinder customer appeal and retailer promotion.

If successful meat substitutes were developed, they would be a boon to soybean growers but something less to cattlemen and poultrymen or hog growers. And greater demand thus created for soy meal might leave much unused soybean oil.

Currently, there are sizable potential markets for more soy flour used as a meat binder and extender and more soy protein isolates used in meat and poultry substitutes. However, it's still too early to predict the overall impact on either the livestock, meat, poultry, or soybean industries.

Agricultural Situation has not appeared since February 1969. Regular monthly publication will resume with this issue.—Ed.

Waiting for Cheaper Interest? Read This

Many farmers are holding off on farm expansion which requires borrowing. They feel today's higher interest outweighs potential gains.

Are they right?

A recent USDA study says, "No." In fact, the study suggests that delaying expansion can be costly to a farm business, whether rates rise, fall, or stay the same.

(Of course, any investment with a doubtful chance of turning a profit, or which is based on a shaky financial structure, is a bad one. The study assumes that you will invest prudently, or not at all.)

Why is it costly not to invest when you have a chance to? The study uses the hypothetical case of a midwestern grain-hog farmer who has an opportunity to borrow money for farm expansion.

Currently, he has $102,000 invested in the farm. Debts amount to $40,000. Land values have been rising.

By borrowing now, the farmer can get enough capital with his equity to buy a 2,580 hog confinement-feeding operation. He can also purchase an additional 275 head capacity unit on an unsecured loan.

He will pay higher annual taxes, interest costs, and social security payments by investing now than if he delays expansion for 2 years. But extra income, assets, net worth (assets minus debt), and borrowing leverage gained through early investment outweigh added costs.

Changes in interest rates have a relatively small effect on the advantages of early investment. The study projects the net worth of the grain-hog farm after 6 years using different interest and investment patterns.

If the farmer borrows no money, and interest is stable, the farm is worth $83,000 at the end of 6 years. Compare this with the net worth if he invests now, or beginning 2 years from now, under various interest trends:

Interest trend:	*Borrowing begins*	
	Now	*In 2 years*
Rising	$155,210	$130,310
Stable	164,340	139,440
Falling	161,850	139,440

AUGUST 1969

AGRICULTURAL SITUATION

sent free to crop, livestock, and price reporters in connection with their work

In This Issue

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Assistant Editor: Raymond Bridge

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